

The above amendments of the claims incorporate limitations previously recited by dependent claims 5, 31, 74, and 92 into independent claims 1, 28, 72, 89, and 90, and correct the dependencies of dependent claims that were formerly dependent on claims which are now cancelled. No new matter has been added. A copy of the amended claims, with insertions and deletions indicated by underlining and brackets, respectively, is attached hereto as Appendix B.

### 3. Miscellaneous points

First, the Examiner disputes Applicants' claim that parent application Ser. No. 09/595,410 is a continuation-in-part of previous copending application Ser. No. 09/575,094. In the parent application, Ser. No. 09/595,410, Applicants filed a preliminary amendment on February 22, 2001, in which a claim for continuing status as a continuation-in-part of application Ser. No. 09/575,094, filed on May 19, 2000, was made.

Second, the Examiner requests correction of the abstract. Upon entry of the above amendment, the abstract is in the form of a single paragraph of not more than 15 lines and on a single page. Therefore, Applicants believe an adequate correction has been made.

### 4. Claim rejections under 35 U.S.C. §112, second paragraph

Claims 1-11, 15, 17-37, 41, 43-66, 70-80, 84, 86-98, 102-113, and 115 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite.

First, the Examiner alleges the term "oxygen scavenging polymer" renders the claims indefinite because any organic material will react with oxygen given enough time. Applicants respectfully traverse this rejection. In light of the present specification, one of ordinary skill in the art will recognize that the oxygen scavenging polymers recited by the present claims are

primarily of interest in packaging applications, such as, but not limited to, for food (e.g., p. 5, lines 21-28). One of ordinary skill in the art will recognize that organic materials which have, for example, an excessively long induction period, an excessively low oxygen scavenging capacity, an excessively low oxygen scavenging rate, or any combination thereof, will not consume oxygen to an extent useful in a packaging application. One of ordinary skill in the art will understand that an organic material which would not be useful in a packaging application would not be an "oxygen scavenging polymer" as that term is used herein.

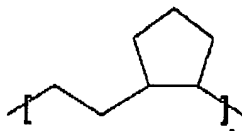
Second, the Examiner alleges the term "insoluble" as recited by at least claim 19 is unclear because solubility is a function of the material in which the solute is dissolved. Applicants respectfully traverse this rejection. "Insolubility" of an oxygen scavenging polymer is clarified by the specification at p. 11, lines 9-13, as referring to a polymer which, upon blending with an oxygen barrier polymer, would give rise to a heterogeneous blend of the two polymers, and not a homogeneous blend. One of ordinary skill in the art can readily recognize whether a blend of two polymers is heterogeneous or homogeneous, and therefore the term "insoluble" is clear as used in claim 19 and any other claims in which the term appears in this context.

#### 5. Claim rejections under 35 U.S.C. §103

The Examiner has rejected claims 1-11, 15, 17-37, 41, 43-66, 70-80, 84, 86-98, 102-113, and 115 under 35 U.S.C. §103(a) as being unpatentable over Bansleben et al., U.S. Pat. No. 6,255,248 ("Bansleben"), in view of Cahill et al., U.S. Pat. No. 6,083,585 ("Cahill"). Insofar as this rejection applies to pending claims 1-4, 6-11, 15, 17-30, 32-37, 41, 43-66, 70-73, 75-80, 84, 86-91, 93-98, 102-113, and 115, Applicants respectfully traverse this rejection.

The claims, as amended, recite blends comprising oxygen barrier polymers and oxygen scavenging polymers comprising an ethylenic backbone and at least one cyclic olefinic pendant group. Neither Bansleben nor Cahill, nor their combination, teaches or suggests such oxygen scavenging polymers.

Bansleben teaches oxygen scavenging copolymers derived from at least ethylene and a strained cyclic alkylene (col. 2, lines 25-27). One of ordinary skill in the art will recognize that such a copolymer would be produced by addition across the double bonds of ethylene and the strained cyclic alkylene. The resulting polymer would have a structure such as the following, wherein the strained cyclic alkylene is cyclopentene:



This polymer does not have an ethylenic backbone, i.e., a backbone which conceptually is derived from ethylene or substituted vinyl, as is presently claimed.

In addition, Bansleben teaches oxygen scavenging copolymers comprising units derived from strained cyclic alkenes, with the oxygen scavenging property provided by the strained configuration of the units derived from cyclic alkylene (col. 3, lines 21-22). Although Bansleben teaches that other units may additionally be present (e.g., vinyl cyclohexene, col. 3, lines 57-61), the reference teaches that units derived from strained cyclic alkylene units impart oxygen scavenging properties to copolymers comprising such units. Thus, Bansleben teaches away from the present claims, in which polymers comprising cyclic olefinic pendant groups having structure I possess oxygen scavenging properties.

Cahill teaches condensation copolymers comprising polyolefin oligomer segments (Abstract). Condensation copolymers do not have an ethylenic backbone, but rather have, for example, polyester backbones (col. 7, lines 13-24, structure III). Further, Cahill teaches a polyolefin oligomer segment as the portion of the copolymer that imparts oxygen scavenging properties to the polymer (col. 10, lines 46-49). Cahill does not teach cyclic olefinic pendant groups as part of the oxygen scavenging polymer.

Regarding the combination of the references, first, given that Bansleben teaches addition copolymers and Cahill teaches condensation copolymers, there is no motivation to one of ordinary skill in the art to combine the references. Even if, accepted strictly for the sake of argument, such motivation existed, neither reference teaches nor suggests an oxygen scavenging copolymer comprising an ethylenic backbone, and therefore their combination cannot either. Further, neither reference teaches cyclic olefinic pendant groups as the primary source of the oxygen scavenging properties of a polymer, and therefore their combination cannot either.

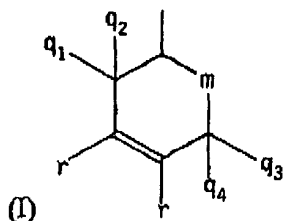
For all the foregoing reasons, Applicants are of the opinion that pending claims 1-4, 6-11, 15, 17-30, 32-37, 41, 43-66, 70-73, 75-80, 84, 86-91, 93-98, 102-113, and 115 are patentable over Bansleben and Cahill, and request this rejection be withdrawn.

#### 6. Rejections for double patenting

First, claims 1-11, 15, 17-37, 41, 43-66, 70-80, 84, 86-98, 102-113, and 115 are provisionally rejected under the judicially-created doctrine of obviousness-type double patenting as being unpatentable over claims 1-3, 5-7, 9-22, 24-26, 28-50, 52-72, and 74-78 of copending application Ser. No. 09/595,410. Insofar as this rejection applies to pending claims 1-4, 6-11, 15, 17-30, 32-37, 41, 43-66, 70-73, 75-80, 84, 86-91, 93-98, 102-113, and 115, Applicants will defer

filing a terminal disclaimer or taking other action to resolve this issue until allowable sets of claims have been established in both the present case and Ser. No. 09/595,410.

Second, claims 1-3, 28-29, 72-73, 75, and 89 are provisionally rejected under 35 U.S.C. §101 as claiming the same invention as that of claims 1-3, 20, 22, 49-50, 52, and 59 of copending application Ser. No. 09/595,410. Applicants wish to point out that by the above amendments, the claims of the present application are limited to oxygen scavenging polymers comprising an ethylenic backbone and at least one cyclic olefinic pendant group, whereas the relevant claims of 09/595,410 are or will be limited to oxygen scavenging polymers comprising oxygen scavenging polymers comprising a cycloalkenyl group having the structure I:



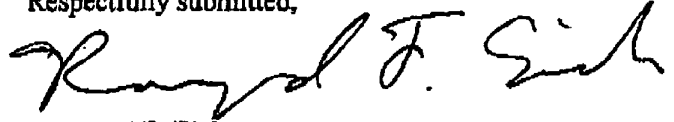
wherein  $q_1$ ,  $q_2$ ,  $q_3$ ,  $q_4$ , and  $r$  are independently selected from hydrogen, methyl, or ethyl;  $m$  is  $-(CH_2)_n-$ , wherein  $n$  is an integer from 0 to 4, inclusive; and, when  $r$  is hydrogen, at least one of  $q_1$ ,  $q_2$ ,  $q_3$ , and  $q_4$  is also hydrogen. Therefore, the subject matter claimed by the present application differs from that claimed by 09/595,410, and Applicants request this provisional rejection under 35 U.S.C. §101 be withdrawn.

### 7. Conclusion

In conclusion, Applicants maintain all pending claims 1-4, 6-11, 15, 17-30, 32-37, 41, 43-66, 70-73, 75-80, 84, 86-91, 93-98, 102-113, and 115 are in condition for allowance. The

Examiner is invited to contact the undersigned patent agent at (713) 934-4065 with any questions, comments or suggestions relating to the referenced patent application.

Respectfully submitted,



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